

Applicant: Motomi Kohno
Appl. No.: 10/766,477

REMARKS

The Applicant thanks the Examiner for the careful consideration of this application.

Claims 1, 3, 5, 10, and 12 are currently pending. By this Amendment, claims 1, 3, 10, and 12 have been amended; and claims 4 and 8 have been cancelled, without prejudice. Based on the foregoing amendments and the following remarks, the Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102

(1) The Office Action rejected claims 1, 3, and 5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,872,973 to Ikebuchi et al. Claims 1 and 3 are the independent claims. The Applicant respectfully traverses this rejection.

Claim 1

The Applicant respectfully submits that Ikebuchi does not anticipate claim 1 for at least two reasons. *First*, Ikebuchi does not disclose “a secondary separation step of blowing secondary air to a lower portion of the conical secondary separation space through a slit toward an upwardly beveled surface of a stabilizer provided centrally in the lower portion of the conical secondary separation space,” as recited by amended claim 1. The Office Action aligns the conic 5 of Ikebuchi with the claimed “stabilizer.” However, Ikebuchi does not disclose blowing secondary air toward an upwardly beveled surface of the conic 5. In contrast, the inlet pipes 19 of Ikebuchi blow air toward a *downwardly* beveled surface of the conic 5, as shown in Fig. 2. (*See, e.g.*, Ikebuchi at Fig. 2.) Therefore, Ikebuchi does not disclose “a secondary separation step

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of blowing secondary air to a lower portion of the conical secondary separation space through a slit toward an upwardly beveled surface of a stabilizer provided centrally in the lower portion of the conical secondary separation space.”

Second, Ikebuchi does not disclose “an exhaust step of continuously exhausting primary, secondary, and tertiary air having the lightweight grains toward a horizontal opposite direction to the whirling direction of the raw grains in the cylindrical primary separation space,” as recited by claim 1. Rather, Ikebuchi discloses that gas c is discharged into the lower end of a vertical outlet pipe 4 that extends axially upward with respect to the whirling direction of the grains. (See, e.g., Ikebuchi at Fig. 2; 2:54-61.) Therefore, Ikebuchi does not disclose “an exhaust step of continuously exhausting primary, secondary, and tertiary air having the lightweight grains toward a horizontal opposite direction to the whirling direction of the raw grains in the cylindrical primary separation space.”

The Applicant respectfully submits that claim 1 is patentable over Ikebuchi for at least the two reasons set forth above.

Claims 3 and 5

The Applicant respectfully submits that Ikebuchi does not anticipate claim 3 for at least two reasons. *First*, Ikebuchi does not disclose “a secondary air blowing unit [that] blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between an upwardly beveled surface of a stabilizer and a lower end of the conical section,” as recited by claim 3. As stated previously, the Office Action aligns the conic 5 of Ikebuchi with the claimed “stabilizer.” However, Ikebuchi does not disclose blowing a high-speed fresh secondary airflow into a

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chamber that surrounds a slit formed between an upwardly beveled surface of the conic 5 and a lower end of the conical section. Rather, the inlet pipes 19 of Ikebuchi blow air into a chamber that surrounds a slit formed between a *downwardly* beveled surface of conic 5 and the lower conical portion 1a of the housing 1. (*See, e.g.*, Ikebuchi at Fig. 2.) Therefore, Ikebuchi does not disclose “a secondary air blowing unit [that] blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between an upwardly beveled surface of a stabilizer and a lower end of the conical section.”

Second, Ikebuchi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains,” as recited by claim 3. Rather, Ikebuchi discloses that the outlet pipe 4 discharges the gas c in a vertical direction that extends axially upward with respect to the whirling direction of the grains. (*See, e.g.*, Ikebuchi at Fig. 2; 2:54-61.) Therefore, Ikebuchi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains.”

The Applicant respectfully submits that claim 3 is patentable over Ikebuchi for at least the two reasons set forth above. Claim 5 depends from claim 3, and is patentable over Ikebuchi for at least the same reasons.

(2) The Office Action rejected claims 1, 3, and 5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,667,600 to Oi et al. Claims 1 and 3 are the independent claims. The Applicant respectfully traverses this rejection.

Claim 1

The Applicant respectfully submits that Oi does not anticipate claim 1 for at least two reasons. *First*, Oi does not disclose “blowing secondary air to a lower portion of the conical secondary separation space . . . toward an upwardly beveled surface of a stabilizer provided centrally in the lower portion of the conical secondary separation space,” as recited by claim 1. The Office Action aligns the guide means 14 and spiral structure 15 of Oi with the claimed “stabilizer.” The Office Action also appears to align the cone 11 of Oi with the claimed “conical secondary separation space.” However, the guide means 14 and spiral structure 15 of Oi are not “provided centrally in the lower portion of the” cone 11. Rather, the guide means 14 and spiral structure 15 are located in the cylindrical main body portion 13 of Oi, which is located above the cone 11. (*See, e.g.*, Oi at 2:38-44; Fig. 1.) In addition, the supply pipe 7 and inlet 8 of Oi do not blow air into the cone 11, but rather blow air into the cylindrical main body portion 13. (*See, e.g.*, Oi at 2:58-63; Fig. 1.) Accordingly, Oi does not disclose “blowing secondary air to a lower portion of the conical secondary separation space . . . toward an upwardly beveled surface of a stabilizer provided centrally in the lower portion of the conical secondary separation space.”

Second, Oi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains,” as recited by claim 1. Oi discloses a central outlet pipe 21/22 that guides material out of the main body portion 13. (*See, e.g.*, Oi at 3:47-53; Fig. 1.) However, the outlet pipe 21/22 does not take air out of the main body portion 13 “against the whirling direction of the raw grains,” as recited by claim 1, but rather, removes it in an axial

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direction with respect to the whirling direction. (*See, e.g.*, Oi at Fig. 1.) Therefore, Oi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains.”

The Applicant respectfully submits that claim 1 is patentable over Oi for at least the two reasons set forth above.

Claims 3 and 5

The Applicant respectfully submits that Oi does not anticipate claim 3 for at least two reasons. *First*, Oi does not disclose that “the secondary air blowing unit blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between an upwardly beveled surface of a stabilizer and a lower end of the conical section,” as recited by claim 3. As stated previously, the Office Action aligns the guide means 14 and spiral structure 15 of Oi with the claimed “stabilizer.” The Office Action also appears to align the cone 11 of Oi with the claimed “conical secondary separation space.” Oi does not disclose that an airflow is blown into a chamber that surrounds a slit formed between the guide means 14/spiral structure 15 and a lower end of the cone 11. Rather, Oi discloses that an airflow is blown into a chamber formed between the guide means 14/spiral structure 15 and the cylindrical main body portion 13. (*See, e.g.*, Oi at 2:38-44; Fig. 1.) In addition, the supply pipe 7 and inlet 8 of Oi do not blow air into the cone 11, but rather blow air into the cylindrical main body portion 13. (*See, e.g.*, Oi at 2:58-63; Fig. 1.) Accordingly, Oi does not disclose that “the secondary air blowing unit blows a high-speed fresh secondary airflow into a chamber that surrounds a slit formed between an upwardly beveled

surface of a stabilizer and a lower end of the conical section.”

Second, Oi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains,” as recited by claim 3. As discussed previously, the outlet pipe 21/22 of Oi does not take air out of its main body portion 13 “against the whirling direction of the raw grains,” but rather, takes it out in an axial direction with respect to the whirling direction of the raw grains. Accordingly, Oi does not disclose “a lightweight grain separating unit for taking air having the lightweight grains in the raw grains out from the upper portion of the cylindrical section against the whirling direction of the raw grains.”

The Applicant respectfully submits that claim 3 is patentable over Oi for at least the two reasons set forth above. Claim 5 depends from claim 3, and is patentable over Oi for at least the same reasons.

Rejections under 35 U.S.C. § 103

- (1) The Office Action rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Ikebuchi in view of JP 2002035699 to Hiroshi. Claim 4 has been canceled, without prejudice, thereby rendering this rejection moot.
- (2) The Office Action rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Oi in view of Hiroshi. Claim 4 has been canceled, without prejudice, thereby rendering this rejection moot.
- (3) The Office Action rejected claims 8, 10, and 12 under 35 U.S.C. § 103(a) as being

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unpatentable over Ikebuchi in view of U.S. Patent No. 4,776,950 to Green et al. Claim 8 has been cancelled, without prejudice. Claim 10 is the independent claim. The Applicant respectfully traverses this rejection for at least three reasons.

First, no reasonable combination of Ikebuchi and Green discloses or suggests “a cylindrical section forming a primary separation space having an opening of a horizontal exhaust pipe for discharging air having the powder bodies at an upper portion thereof,” as recited by claim 10. Referring to Fig. 2 of Ikebuchi, the cylindrical casing 1 has a lower opening of a ***vertical*** outlet pipe 4 for discharging air, not “an opening of a horizontal exhaust pipe” as claimed. (See, e.g., Ikebuchi at 2:59-61; Fig. 2.) Green does not provide the missing disclosure. Accordingly, no reasonable combination of Ikebuchi and Green discloses or suggests “a cylindrical section forming a primary separation space having an opening of a horizontal exhaust pipe for discharging air having the powder bodies at an upper portion thereof.”

Second, no reasonable combination of Ikebuchi and Green discloses or suggests “a grain feeding unit for feeding grains containing the powder bodies into the cylindrical section from a lower port of the cylindrical section,” as recited by claim 10. Ikebuchi instead discloses that “an inlet pipe 13 for the material to be processed a is tangentially connected to the ***upper part*** of the . . . casing 1.” (See, e.g., Ikebuchi at 2:50-52; Fig. 2 (emphasis added).) Green does not provide the missing disclosure. Accordingly, no reasonable combination of Ikebuchi and Green discloses or suggests “a grain feeding unit for feeding grains containing the powder bodies into the cylindrical section from a lower port of the cylindrical section.”

Third, no reasonable combination of Ikebuchi and Green discloses or suggests “a

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secondary air blowing unit for blowing high-pressure air . . . on an upwardly beveled surface of a stabilizer,” as recited by claim 10. As demonstrated previously, the inlet pipes 19 of Ikebuchi blow air toward a *downwardly* beveled surface of the conic 5. (See, e.g., Ikebuchi at Fig. 2.) Green does not provide the missing disclosure. Therefore, no reasonable combination of Ikebuchi and Green discloses or suggests “a secondary air blowing unit for blowing high-pressure air . . . on an upwardly beveled surface of a stabilizer.”

The Applicant respectfully submits that claim 10 is patentable over any reasonable combination of Ikebuchi and Green for at least the three reasons set forth above. Claim 12 depends from claim 10, and is patentable for at least the same reasons.

(4) The Office Action rejected claims 8, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Oi in view of Green. Claim 8 has been cancelled, without prejudice. Claim 10 is the independent claim. The Applicant respectfully traverses this rejection for at least two reasons.

First, no reasonable combination of Oi and Green discloses or suggests “a cylindrical section forming a primary separation space having an opening of a horizontal exhaust pipe for discharging air having the powder bodies at an upper portion thereof,” as recited by claim 10. Referring to Fig. 1 of Oi, the top body 18 has an opening of a *vertical* outlet pipe 21/22, not “an opening of a horizontal exhaust pipe” as claimed. Green does not provide the missing disclosure. Accordingly, no reasonable combination of Oi and Green discloses or suggests “a cylindrical section forming a primary separation space having an opening of a horizontal exhaust pipe for

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discharging air having the powder bodies at an upper portion thereof.”

Second, no reasonable combination of Oi and Green discloses or suggests “a secondary air blowing unit for blowing high-pressure air at a lower portion of the conical section from a circumferential slit on the conical section . . . on an upwardly beveled surface of a stabilizer” as recited by claim 1. The Office Action aligns the guide means 14 and spiral structure 15 of Oi with the claimed “stabilizer.” The Office Action also appears to align the cone 11 of Oi with the claimed “conical section.” However, Oi does not disclose that the supply pipe 7 blows air from a circumferential slit on the cone 11 onto the guide means 14/spiral structure 15. Rather, as shown in Fig. 1, Oi discloses that the supply pipe 7 blows air onto the guide means 14/spiral structure 15 through an inlet 8 in the cylindrical main body portion 13. (See, e.g., Oi at Fig. 1; 2:57-62.) Green does not provide the missing disclosure. Accordingly, no reasonable combination of Oi and Green discloses or suggests “a secondary air blowing unit for blowing high-pressure air at a lower portion of the conical section from a circumferential slit on the conical section . . . on an upwardly beveled surface of a stabilizer.”

The Applicant respectfully submits that claim 10 is patentable over any reasonable combination of Oi and Green for at least the two reasons set forth above. Claim 12 depends from claim 10, and is patentable for at least the same reasons.

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Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant, therefore, respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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